

**WHAT IS CLAIMED IS:**

1. An image sensor comprising:
  - (a) a plurality of photosensitive sites which convert incident light into a charge for forming a bounded array of active imaging pixels; and
  - (b) one or more substitutional pixels sites arranged in predetermined locations and interspersed amongst the boundary of the array of active imaging pixels;wherein the substitutional pixels are of a different design from the active imaging pixels which substitutional pixels provides data, information or function different from the active imaging pixels for improving performance, operation, manufacture, and/or assembly of the image sensor.
2. The image sensor as in claim 1, wherein the substitutional pixels are amplifier circuits or buffer circuits for improving distribution of current or voltage across the array of pixels.
3. The image sensor as in claim 1, wherein the substitutional pixels are amplifier circuits or buffer circuits for improving signal integrity within or across the array of pixels.
4. The image sensor as in claim 1, wherein the substitutional pixels have response characteristics for determining alternate image parameters including alternate color, infrared constituents or other photo-metric parameters.
5. The image sensor as in claim 1, wherein the substitutional pixels are fiducial elements which can be used for a mechanism for aligning the image sensor.
6. The image sensor as in claim 1, wherein the substitutional pixels provide a ground contact.

7. The image sensor as in claim 1, wherein the substitutional pixels provide dark reference levels for image processing.

8. A camera comprising:

(a) an image sensor comprising:

(a1) a plurality of photosensitive sites which convert incident light into a charge for forming a bounded array of active imaging pixels;  
and

(a2) one or more substitutional pixels sites arranged in predetermined locations and interspersed amongst the boundary of the array of active imaging pixels;

wherein the substitutional pixels are of a different design from the active imaging pixels which substitutional pixels provide data, information and/or function different from the active pixels for improving performance, operation, manufacture, and/or assembly of an imaging system; and

(b) a mechanism for correcting an image created by the plurality of pixels by providing a signal level for an image site at a substitutional pixel location.

9. The image sensor as in claim 8 wherein the mechanism for correcting and providing the signal level at the substitutional pixel location is done using nearest neighbor interpolation methods.

10. A camera comprising:

(a) an image sensor comprising:

(a1) a plurality of photosensitive sites which convert incident light into a charge for forming a bounded array of active imaging pixels;  
and

(a2) one or more substitutional pixels sites arranged in predetermined locations and interspersed amongst the boundary of the array of active imaging pixels;

wherein the substitutional pixels are of a different design from the active imaging pixels which substitutional pixels provide data, information and/or function different from the active pixels for improving performance, operation, manufacture, and/or assembly of an imaging system.

11. The camera as in claim 10, wherein the substitutional pixels are amplifier circuits or buffer circuits for improving distribution of current or voltage across the array of pixels.

12. The camera as in claim 10, wherein the substitutional pixels are amplifier circuits or buffer circuits for improving signal integrity within or across the array of pixels.

13. The camera as in claim 10, wherein the substitutional pixels have response characteristics for determining alternate image parameters including alternate color, infrared constituents or other photo-metric parameters.

14. The camera as in claim 10, wherein the substitutional pixels are fiducial elements which can be used for a mechanism for aligning the image sensor.

15. The camera as in claim 10, wherein the substitutional pixels provide a ground contact.

16. The camera as in claim 10, wherein the substitutional pixels provide dark reference levels for image processing.